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PRICES AND DEFLATION

EDWARD KEMMERER



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High Prices and Deflation

HIGH PRICES AND DEFLATION

BY

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With an Introduction by
FRANK A. VANDERLIP

PRINCETON UNIVERSITY PRESS

LONDON: HUMPHREY MILFORD

OXFORD UNIVERSITY PRESS

1920

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PRINCETON UNIVERSITY PRESS
Princeton, N. J.

Published 1920
Printed in the United States of America



PREFATORY NOTE

This book represents a revision and enlargement of three articles published during the winter of 1919–1920 by the Bankers' Statistics Corporation of New York City. The subjects of the three articles were respectively *Inflation*, *High Prices*, and *Deflation*. In view of the widespread interest shown in the articles, and of the receipt of numerous requests for copies of them, I have revised them for publication in book form. The Bankers' Statistics Corporation has kindly consented to this republication.

INTRODUCTION.

The six years from 1913 to 1919 are striking ones from many points of view. During this period we saw the fires of the world's greatest war smolder, break into flames and die away again; we witnessed the overthrow of great nations and the repartition of Europe along new lines; countries which had not existed prior to 1913 as national units sprang into being and vast armies of men were drawn from factories, desks and fields, trained and sent to battle from which many never returned. Coincident with these changes, problems of the first importance have developed in our economic life, problems which affect each of us to-day in a very vital manner and which demand intelligent study and correct solution. Chief among these problems is that of the high cost of living, its causes and effects, and the question of what is to be done to relieve the situation as it now exists. An enlightened public opinion on this whole subject is an urgent national need.

The increase in general prices throughout the world is the outstanding economic phenomenon of the period included between 1913 and 1919. In Australasia that rise was about 100 per cent; in countries having a gold stand-

ard still, such as the Scandinavian nations, Japan and the United States, it has varied from 150 per cent to 250 per cent, while in paper money countries, like Russia and Austria, it has mounted to several thousand per cent.

It is evident that when the price level increases, the value of the dollar declines. To double the price level is to cut the dollar in half. Inflation, followed by the inevitable depreciation of money, has varied during these six years in different countries. Even in the same country different kinds of prices, as, for example, wholesale prices, retail prices, wages and prices for public services responded with different degrees of promptness and at different rates to inflationary forces. The same thing may be said of the various commodities within each of these groups.

The ever-present question of the "profiteer" can be traced back to the changing extents and varying degrees of promptness to which wholesale and retail prices, respectively, have responded to the forces of inflation. The reason for the high cost of living and for industrial disturbances, if tracked down, will lead back largely to the same cause. Increase in wages has not followed closely enough the increase in

price level, and the labor problem has thus continued to be a very troublesome one. Fixed or slowly rising rates for railroads and other public utilities under governmental control have not kept pace with the enormous rise in the costs of materials and services. The result has been retarded development of our transportation and transmission systems.

The true value of savings accounts has been cut in half by the rapidly depreciating dollar, and the same is true of paid-up insurance policies, of fixed incomes from bonds, mortgages, pensions and preferred stocks. Chief among the sufferers have been those who least deserved to be exploited—colleges, universities, benevolent institutions, and the thrifty people who in the past saved capital and put it to some productive use. All these have been penalized, and the newly rich, with extravagant spending tendencies, have watched gold pour into their purses. Teachers, clerks and others with fixed salaries have been hard hit. On the other hand, the facility with which money could be borrowed, owing to the low rate of interest demanded, led to dangerous speculation and shameless extravagance. Widespread discontent and extreme radicalism have resulted.

In this book *High Prices and Deflation*, Professor Kemmerer explains the process of inflation and the rise in the cost of living since 1913, examines the degree of inflation and considers the economic and social results flowing from it. He shows why prices must ultimately come down and points out the policy to be pursued in order to bring about deflation. There are no more important questions demanding our attention to-day than these, and an effort to put them squarely before the public in a simple, clear and concise manner is worthy of the highest praise and the greatest success. Professor Kemmerer's book is a most useful contribution to a very vital subject.

FRANK A. VANDERLIP.

"Beechwood,"
Scarborough-on-Hudson,
New York,
August 18, 1920.

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CHAPTER I—INFLATION

High Prices and Deflation

CHAPTER I

INFLATION

To what extent and why has the level of prices in the United States risen during the past seven years? What are the chief economic results of this high and rising price level? Will the price level decline in the near future, and if so what forces will work to bring about the decline? The subjects suggested by these three questions may be briefly designated by the terms *Inflation*, *High Prices*, and *Deflation*—the subjects of the three chapters of this book.

Although the term inflation in current discussions is used in a variety of meanings, there is one idea common to most uses of the word, namely, the idea of a supply of circulating media in excess of trade needs. In a previous article¹ by the writer, upon whose detailed statistics revised and extended to date many of the conclusions in the present chapter are based, inflation was described as occurring

¹ Inflation: The American Economic Review, June, 1918, pp. 247-269.

“when, at a given price level, a country’s circulating media—money and deposit currency—increase relatively to trade needs.” The value of money, like the value of every other commodity, is the resultant of the interaction of the forces of demand and supply. An increase in the circulating media (i. e., money, and deposit currency supported by money in bank reserve) relative to trade needs tends to make the monetary unit depreciate, in other words, to force down the purchasing power or the market value of the dollar.

There are two kinds of depreciation—specific depreciation and general depreciation. Specific depreciation occurs when one or more kinds of exchange media are issued in such relative excess that they depreciate in terms of the legal standard-money unit. Good examples of specific depreciation are found in the United States greenbacks from 1863 to the end of 1878, and in the notes of the Bank of England during the period of suspension of specie payments from 1797 to 1821. General depreciation occurs when excessive issues of money, or of deposit currency which circulates in the form of checks, result in the depreciation of the legal standard-money unit itself. Examples of general depreciation are found in

England during the years immediately following the Australian and Californian gold discoveries and in all gold standard countries from 1896 to 1913. In these cases gold itself depreciated and the prices of most goods in terms of gold standard money rose. Obviously, general depreciation may exist either with or without specific depreciation.

The United States since 1913 has had general depreciation, but fortunately has escaped specific depreciation,¹ for all forms of United States money and deposit currency have been maintained at par with the standard gold unit of value. The monetary depreciation we have had has not been a depreciation of paper money or of deposit currency in terms of gold, but a depreciation of our gold monetary unit itself, and of all other kinds of exchange media whose values have moved with that of gold.

In attempting to form a judgment as to the extent to which our circulating media have been inflated since 1913, the first problem is to measure in some way the growth, since that date, of the country's physical volume of business. Money and circulating bank credit exist

¹ During the latter days of the war it was reported that a slight premium on gold appeared in a few transactions in some parts of the United States. It rapidly disappeared.

primarily as instruments for exchanging goods and services. This exchange work is their job. To what extent, if any, has the job increased during the last six years? This question cannot be answered with any high degree of accuracy, but a rough approximation can be reached through the study of certain business statistics which typify business activity and growth. Obviously the statistics used for this purpose should be statistics of physical quantity and not of value involving prices, since movements of the price level are one of the results of inflation.

Among the best items for measuring the movement of business in general, because they are items that enter into so many products, are the production of pig iron, bituminous coal, anthracite coal, petroleum, copper, and silver. Other goods indices of general business are the number of tons of freight carried on important railroads and the tonnage of vessels entered and cleared at American ports. Representative of agricultural industry is the production of wheat, corn, and cotton; and representative of the building industry is the number of building permits given in leading cities. Here are twelve items, any one of which is an honest witness of the growth of American business,

but each of which has its own bias. Safer than to trust any one of them is to take the testimony of all, so that in the mouths of many witnesses the truth may be established.

If we reduce the figures of these twelve items to a percentage basis, taking as 100 the figure for the year 1913, and if we then combine these figures into a simple average, we arrive at the following series of index numbers¹ which represent in a rough way the growth of the country's physical volume of business since 1913.

1913	100
1914	99
1915	104
1916	109
1917	112
1918	113

Most of the data used in the computation of the above series of index numbers are not available for the year 1919. Fortunately, however, we have in the figures relating to the "physical volume of trade" now being published every month in the *Federal Reserve Bulletin* data for a considerable number of items that are useful indices of business growth. Selecting the more important of

¹ For a fuller description of the items entering into these index numbers, see E. W. Kemmerer, Inflation, American Economic Review, June, 1918, p. 248, note 1.

these items, for which figures are available for the years 1918 and 1919, thirteen in number, and comparing the figures for 1918 (which are taken as 100) with those of 1919, we arrive at the following result:

(1) Tonnage of vessels cleared in foreign trade, ...	113.6
(2) Total freight carried on canals at Sault Ste. Marie,	79.7
(3) Bituminous coal, estimated production,	78.2
(4) Anthracite coal, estimated production,	87.2
(5) Total output of gasoline,	110.9
(6) Pig iron production,	79.4
(7) Steel ingot production (8 months only),	86.2
(8) Lumber shipment (southern pine, western pine, Duglas fir, eastern white pine, and North Carolina pine),	97.0
(9) Receipts and shipments of cattle of all kinds at 15 western markets,	104.3
(10) Cotton consumption in the United States,	95.7
(11) Cotton spindles active,	101.1
(12) Wool consumption in the United States,	89.7
(13) Imports of raw silk,	137.5
Average of all 13 items,	97.0

The physical volume of business done in the United States in 1919 as evidenced by the above figures was therefore 3 per cent less than that for 1918. This percentage decline in 1919 as compared with 1918 would give an index number of 109.6 (in the table on page 7) for the physical volume of business done in 1919—

an index number that is only about one-half of one per cent less than that for 1916.¹

Such a decrease in 1919 is not surprising, when one thinks of the decline in all kinds of war industry after the armistice, the inhibiting influences brought about by the process of re-absorbing millions of fighting men in economic activities, the transfer of millions of others from war time industries to industries of peace, and the large number of labor disturbances that characterized the year 1919.

With a price level unchanged, a given physical volume of business could probably have been carried on under the war conditions prevailing in the United States during the years 1917 and 1918, with a smaller amount of money and circulating credit than in normal

¹ Professor Wesley C. Mitchell has computed a series of index numbers for the years 1913 to 1918 of the physical volume of business by taking the yearly production of "90 raw materials, including substantially all the great staples and a few rather trifling imported commodities," weighting them at the prices of 1917. His results are very similar to those I have arrived at above by an entirely different method. Mitchell's figures are as follows:

1913	100
1914	99
1915	107
1916	111
1917	114
1918	116

History of Prices During the War. Summary. War Industries Board, pp. 44, 45.

times, because the shifting of production to government account shortened greatly the average distance from producer to consumer, and lessened the average amount of exchange or money work required to place a given amount of goods in the hands of the final consumer. On this subject Professor G. O. Virtue said in a recent article:¹ "the effect of this large-scale purchase by the government, often in the early stages of production, and its method of dispensing them without further use of money, by decreasing the rapidity of circulation of great quantities of goods, must have affected the price level in the same way as would a reduction in the amount of goods, or a sudden resort to barter on a larger scale, or to a more direct move of marketing."

Let us now turn from the demand for money and deposit currency to the supply. The term "money in circulation" is one that is used to cover a variety of different meanings, but one of the commonest meanings, and, for the purposes of a study of inflation for the period of 1913 to 1919, the most satisfactory one, is to make it cover all money in active circulation, namely in the pockets of the people and the

¹ Another Reason Why War Prices are High Prices. Quarterly Journal of Economics, August, 1919, pp. 729-733.

tills of merchants and all money in the reserves of banks—actual cash reserves, not legal reserves—except such a part of that held by federal reserve banks as may properly be allocated as reserve for federal reserve notes. If the federal reserve notes are counted as money in circulation, as I believe they should be, then the cash reserve held against these notes obviously should not be counted as in circulation. On the other hand *cash* reserves held in banks against deposits are usually considered as money in circulation. If such cash reserves, in the vaults of individual banks, serving as the support of bank deposits are to be considered as in circulation for the years prior to the complete establishment of the federal reserve system, the cash reserves now held by federal reserve banks against deposits of member banks, cash reserves which now perform indirectly the greater part of the cash reserve function formerly performed for the present member banks by “cash on hand,” such cash reserves in federal reserve banks should now be counted as money in circulation. It is misleading to adopt the practice followed by some writers, of counting cash reserves (i. e., actual cash on hand) in national banks as “money in circulation” before the inauguration of the

federal reserve system and to exclude from “money in circulation” since that time the reserves held by federal reserve banks against deposits—reserves which in the main perform the same function, though indirectly, that the cash reserves of individual banks previously performed.

Interpreting the words “money in circulation” in the manner above described, allocating the same percentage of reserve to federal reserve notes and to federal reserve deposits, and taking the average figures for four quarterly dates of each year as the figure for the year, we arrive at the following table for the monetary circulation of the United States:

MONETARY CIRCULATION.

Year	Amount of Money in Circulation ¹ (Millions)	Index Number
1913	\$3,390	100
1914	3,505	103
1915	3,682	109
1916	4,159	123
1917	4,914	145
1918	5,579	165
1919	5,793	171

¹ In computing the total monetary circulation of the United States, the following plan has been used. In order to make the figures representative of the entire year, and render them comparable with those for the growth of business, we have taken for each year the average of the

From 1913 to 1919 the amount of money in circulation therefore increased 71 per cent, while the physical volume of business increased 9.6 per cent.

Two important items in this great increase in the monetary circulation were: (1) the heavy net imports of gold from Europe resulting from our large exports of war materials to the belligerent countries, and (2) the policy of the federal reserve authorities of withdrawing gold certificates and gold coin from active circulation, and substituting therefor so far as possible federal reserve notes, thereby substituting for money representing 100 per cent gold a form of money which required only a legal gold reserve of 40 per cent. The period

circulation figures for the four quarterly dates, beginning with that of March 31.

The circulation includes all kinds of money in the country, except that held in the federal treasury as assets of the government, and except that part of the cash held by the twelve federal reserve banks and the twelve federal reserve agents, that would represent the same percentage of cash reserve against outstanding federal reserve notes as the percentage held against deposits and notes combined. Only net circulation of federal reserve notes is therefore included in the circulation, but the net circulation is computed on the basis of allocating to the notes the same percentage of reserve as that represented by the percentage of cash reserve held by the federal reserve banks to deposits and outstanding notes combined. In this way the figures for the period before the federal reserve amendment of June 21, 1917, are made comparable with those after that date.

studied witnessed a very large expansion of federal reserve notes. In 1913 there were no federal reserve notes, and on November 7, 1919, there were \$2.8 billions of federal reserve notes in circulation against which a reserve of 45.3 per cent was held, giving a net circulation uncovered by gold of \$1.5 billions. At the present writing (March 26, 1920) the circulation of federal reserve notes is \$3,048 millions against which a reserve of 40.1 per cent is held, giving a circulation uncovered by gold of \$1,826 millions.

The period 1913 to 1919 was a period in which the country's legal reserve requirements for bank deposits were enormously reduced. In 1913 national banks in central reserve cities, namely, New York, Chicago and St. Louis, were required to keep on hand cash reserves equivalent to 25 per cent of their deposits, both demand deposits and time deposits. National banks in the 47 reserve cities were also required to maintain reserves of 25 per cent, but one-half of this could be maintained as an ordinary deposit with a national bank in a central reserve city. Other national banks, so called "country banks" were required to maintain against deposits reserves of 15 per cent of which three-fifths could be held as an ordinary

deposit with a national bank in a reserve city or a central reserve city. For all banks the 5 per cent cash redemption fund held at Washington against outstanding bank notes was counted as part of the legal reserves against deposits.

At the present time all legal reserves of national banks consist of deposits with federal reserve banks against which deposits the federal reserve banks are required to maintain only a 35 per cent lawful money reserve. Time deposits, namely deposits payable after notice of 30 days, which constitute about one-fourth of the total individual deposits of national banks, since 1913 have been treated separately as regards legal reserves and in all national banks are now subject to a reserve requirement of only 3 per cent. The 5 per cent bank note redemption fund can no longer be counted as legal reserve against deposits. Against demand deposits the present legal reserve requirement is 13 per cent for banks in central reserve cities, 10 per cent for banks in reserve cities and 7 per cent for banks in other cities.¹ Certain minor changes in legal reserves

¹ An amendment, approved June 21, 1917, to the federal reserve act, provided that a central reserve city bank or a reserve city bank if located in the outlying districts of such a city or in a territory adjoining to such a city by the

have also been made since 1913, as for example those relating to "the float" and to reserves against United States Government deposits, but the changes above mentioned are the principal ones.

An idea of the extent of the reductions in legal reserves of national banks since 1913 can be obtained by assuming three national banks, each having \$1,200,000 demand deposits, \$300,000 of time deposits, and \$100,000 of national bank notes outstanding, one bank being in a central reserve city, one in a reserve city, and one in a "country bank" city, and asking ourselves what ultimate legal cash reserves would have been held against these deposits in 1913 and in 1920 respectively. The answer is given in the following table:

Bank.	1913		1920	
	Per Cent.	Amount.	Per Cent.	Amount.
Central Reserve city, ...	25	\$375,000	4.18	\$62,750
Reserve city,	15.6	234,375	3.34	50,150
Country,	7.4	111,093.75	2.50	37,550

Here is a reduction for central reserve cities of from 25 per cent to 4.18 per cent, for reserve

extension of its corporate charter may, upon the affirmative vote of five members of the federal reserve board, have its legal reserves reduced to those of a class of cities having lower requirements.

cities from 15.6 per cent to 3.34 per cent, and for country bank cities from 7.4 per cent to 2.50 per cent; giving a reduction for all three banks of 79 per cent.

State banks and trust companies entering the federal reserve system have generally experienced substantial reductions in legal requirements so far as actual cash reserves are concerned.

The reduction of legal reserve requirements was a statutory recognition of the fact that smaller cash reserves are needed under a banking system possessing a group of central banks of issue and rediscount than are needed under a highly decentralized system of banks like our American banking system prior to the federal reserve act. It was perfectly proper that with the establishment of the federal reserve system the legal reserve requirements of the banks should be reduced. Whether the reduction was too great or not, only experience will tell. In the writer's judgment the reduction was excessive, and it was a mistake to discontinue all cash-in-vault legal reserve requirements of member banks. The important fact, however, to note here is, that this reduction of reserve requirements taking place at just the time when the country was being flooded with gold

from the belligerent countries of Europe¹ created the possibility of a tremendous loan and deposit expansion.

This potential expansion was quickly turned into an actual expansion under the pressure of four important forces. They were: (1) the natural desire of bankers and business men for profit; (2) the patriotic impulses of bankers and business men to render the nation the best possible services in its time of emergency; (3) the desire of the Government to finance itself with the minimum disturbance to legitimate business; (4) the desire of the Government to float its war securities in large volume at the minimum possible rate of interest. Let us consider these forces briefly.

(1) Take the case of a bank in a central reserve city which had been normally carrying a cash reserve in the neighborhood of say 25 per cent, because that was the minimum percentage required by law, or because experience had shown that a reserve of about that size was best suited to its particular type of business,

¹ From August 1, 1914, to April 1, 1917 (practically the period of the war prior to our entrance as a belligerent), our net importations of gold amounted to \$1,109 millions and this enormous increase in our supply we maintained throughout the remainder of the war. We have most of it to this day, although there have been substantial losses since the armistice.

or for both of these reasons. Such a bank we will assume after the establishment of the federal reserve system, of which it became a member, found that the legal reserve requirement against demand deposits was cut to 13 per cent and that the greater liquidity of its assets brought about, through the facilities for rediscount and collateral loans offered by the federal reserve system would apparently make it safe for it to reduce its reserve to 17 per cent (namely, 13 per cent legal reserve in the form of a deposit with its federal reserve bank and 4 per cent cash in vault). What would be such a bank's probable course of action under these circumstances? The answer is obvious. It would reduce its normal reserve percentage from 25 to 17¹ because by so doing it would increase its profits without materially weakening its financial position or impairing its efficiency. The most likely method of doing this and the method that would probably be used, if possible, would be for the bank to extend its loan and deposit accounts. To do

¹Of this 17 per cent, 13 would be in the form of a deposit with its federal reserve bank against which a cash reserve of only 35 per cent would be legally required, and of the 4 per cent till money held by the bank the greater part would probably consist of federal reserve notes against which the federal reserve banks would be legally required to hold only 40 per cent cash reserve.

this it might well reduce its discount rates, extend the credit limits of its best customers, and possibly extend credit to others whom it had previously refused out of what might appear to it now to have been an excess of caution. In this way the loan account would be expanded, deposits would be increased, and the reserve percentage (legal reserve plus till money) would be reduced from 25 per cent to the new norm of 17 per cent, the bank thereby probably realizing for its stockholders substantially increased profits.

If this reduced reserve requirement were limited to one bank, the possibility of deposit expansion thereby created would be small because the enlarged deposits resulting from the increased loans would tend to give the bank an unfavorable clearing house balance, and to draw quickly away thereby a part of its reserve money. Under the conditions, however, existing during the war period this opportunity and this motive for reserve reduction, or in other words for loan and deposit expansion, were open to all of the national banks in the country and to large numbers of state banks and trust companies. It was but natural therefore that they should all endeavor to expand, in order to take advantage of the oppor-

tunity to increase their profits. The last few years have been highly profitable years for commercial banks.²

Much of this potential loan and deposit expansion appeared in the early years of the war, when the demands of European belligerents for our products assumed tremendous proportions and offered high profits to American producers of war materials, so high as to call for a large expansion in the production of these materials. Labor was shifted from "non-essential industries" to "essential industries," and while many of the former lagged, the latter were greatly stimulated. Here then was a great demand for increasing bank credit at just the time that the establishment of the federal reserve system, the reduced cash reserve requirements of commercial banks, and the heavy imports of gold from Europe were making a larger loan and deposit expansion possible. The new federal reserve law and the

² In each of the fiscal years 1917, 1918 and 1919, the national banks of the country showed a higher percentage of earnings on their capital stock than in any previous year in their history. The average earnings on capital stock in 1917 were 17.96 per cent, in 1918 19.33 per cent, and in 1919 21.46 per cent. In his annual report for 1919 (page 7) the Comptroller said: "The increase in the net earnings which has taken place in the past five years thus amounts to \$91,095,829, which exceeds by \$4,491,778 the total increase in net earnings shown in the entire 40-year period from 1874 to 1914."

heavy gold imports created a potential supply of new circulating bank credit, the war stimulated the demand. It was to the banker's financial interest to expand credit, and to the interest of many groups of business men to seek these newly available funds.

(2) As a matter of patriotic duty bankers were expected to expand their loans and deposits. Long before the United States entered the war, the sympathy for the Allies in this country became so pronounced and the conviction that they were fighting our battles became so strong, that production for the Allies and the granting of loans to finance such production were felt to be patriotic acts. After the United States entered the war, the extension of bank credit to the maximum limit consistent with safety to "essential industries," and to the buyers of liberty bonds was looked upon as the paramount duty of banks.

(3) The demands of patriotism were looked upon as requiring the public to avail themselves to the limit of the liberal loan facilities made available by the banks. Nearly everywhere the belief prevailed that with the loans thus available, war industries should expand their production and the public should buy bonds to the maximum. "Borrow and buy"

was a widely used slogan in the first three liberty loan campaigns, and was strongly, although more quietly, urged upon the public, in the fourth liberty loan and the victory loan campaigns.

(4) In their laudable desire to keep interest rates low on bank loans to essential war industries, and more importantly, to make possible the flotation of large government war loans at excessively low rates of interest, the federal reserve authorities adopted a policy of low discount rates for the federal reserve banks and of preferential rates and great liberality for advances made on the security of government war obligations. Throughout the entire period of our belligerency the loan and discount rates of the federal reserve banks were below the market rates, and "the market was in the federal reserve banks." Funds received by banks for the government through the sale of liberty bonds and short-time certificates were usually left for a time on deposit with these receiving banks at the low rate of 2 per cent interest and without reserve requirement. This policy greatly expanded deposit credit. When the deposits were called by the government the funds for meeting the calls could readily be obtained by the bank's borrowing from its

federal reserve bank either by the rediscount of war paper, or by a direct loan collateralized by government security; and the rates charged for these loans were usually enough lower than the rates paid to the banks by the customer for his advance used in buying the bonds to yield the bank at least a small net profit. The result was the piling up of many billions of dollars of liberty bonds and certificates of indebtedness in the commercial banks of the country and the federal reserve banks, particularly the latter, in the form of collateral for loans. Federal reserve banks loans so collateralized provided member banks with a continuously increasing supply of legal reserves for further loan and deposit expansion; and the expansion of federal reserve loans, with resulting increase in federal reserve deposits and issues of federal reserve notes was continually reducing the percentage of reserves held by federal reserve banks. We bought our low interest rates on government paper at the price of very high prices for commodities. *We kept interest rates down by a policy that kept pushing the price level up.*

The fundamental economic law which makes the interest rate the resultant of the interaction of the forces of demand and supply in

the capital market was forcing up the *real* interest rate under the influences of a world wide destruction of capital and an unprecedented demand. "Present goods were at a large and ever-increasing premium over future goods." The fundamental economic law determining the *real* interest rate could not be annulled by the policy of the federal reserve board of artificially depressing the market rate of discount through inflating the country's supply of bank notes and deposit currency. When the discount rate was artificially pushed down prices bulged up. The government, it is true, paid lower rates of interest on its bonds, but it was compelled to pay higher prices for the war supplies it bought, and was therefore compelled to float more bonds. It paid lower interest *rates* by reason of this policy, but it paid and will pay more *interest*.

Because of the observation that the more money and deposit credit an individual has the more goods he can buy, the inference was popularly drawn that the more money and deposit credit the government could get, the more war goods and services it could buy.

The forces above described favored loan and deposit expansion. Such expansion was profitable to the banks and profitable to business

men, while to the banker, the business man, and the ordinary citizen, the acts which were resulting in this expansion appeared to be acts of patriotic duty.

The heavy drain of gold which such a condition of affairs would normally have brought about was prevented by the gold embargo, which was in effect from September 7, 1917, to June 10, 1919, by the government's giving wide publicity to the doctrine that the use of gold coin or gold certificates in circulation or the holding of them in one's possession was an unpatriotic act, that all gold should be impounded in the federal reserve banks where it would serve the country with maximum efficiency, and by the further fact that most of the leading countries of the world were inflating their currency and bank credit at even more rapid rates than we were.

The result was an expansion of bank loans and, in consequence, of deposit currency such as this country and probably no other country ever saw before in an equal space of time. In the following table the expansion of bank deposits is shown. The figures cover individual and government deposits in commercial banks and government deposits in federal reserve banks.

BANK DEPOSITS 1913-1919.

Year	Deposits in State Govt. Banks		Deposits in Banks and Trust Cos. ²		Deposits in Federal Reserve Banks ³		Total Deposits
	Amount (Millions)	Index Numbers	Amount (Millions)	Index Numbers	Amount (Millions)	Index Numbers	
1913, ..	\$6,020	100	\$6,658	100			\$12,678 100
1914, ..	6,248	104	7,182	108			13,430 106
1915, ..	6,912	115	7,499	113			14,411 114
1916, ..	8,288	138	9,504	143	\$48	17,849 131	
1917, ..	9,923	165	11,194	168	156	21,273 168	
1918, ..	11,540	192	12,099	182	132	23,771 188	
1919, ..	13,113	218	14,708	221	107	27,928 220	

Here we have within a period of six years an increase in our national bank deposits of approximately 118 per cent, or over seven billion dollars, and an increase of state bank and trust company deposits of over 121 per cent, or over six billion dollars. The two together represent an increase of over 120 per cent of our deposits in commercial banks since 1913, or an increase of over 13 billion dollars.

Probably 80 to 85 per cent of the country's business is conducted through the instrumentality of bank checks. It is through checks

¹ Average for dates of five or six comptroller's calls each year.

² Computed from figures published each year by the Comptroller of the Currency and referring to a date about June 30.

³ Figures are averages for the government deposits on the approximate dates of the comptroller's calls for national banks each year so as to correspond as nearly as possible with the figures for deposits of national banks given in the first column.

that deposits circulate and that the bank's depositor gives expression to his demand for goods. The war period has been one in which deposits have circulated at a more rapid rate than usual and the doubling of deposits has therefore probably resulted in an even greater increase in the country's deposit currency circulation.

This tremendous increase in bank deposits has resulted in a great decline in the average percentage of actual cash reserves held against deposits —namely the ratio of deposits (as above computed) to actual cash held by national banks, state banks, trust companies, and federal reserve banks (exclusive of reserves held against federal reserve notes). This average percentage for the country as a whole has varied as follows since 1913:

PERCENTAGE OF CASH RESERVE TO TOTAL
DEPOSITS.

Year	Percentage
1913,	11.7
1914,	11.7
1915,	11.9
1916,	10.7
1917,	10.6
1918,	7.0
1919,	6.6

The proportion of gold in our total circulation has likewise materially declined. On July

1, 1914, our stock of monetary gold (namely, gold coin, plus gold bullion in the treasury) was equivalent to 55.3 per cent of our total monetary circulation (as computed by the Treasury Department); and on June 1, 1920, it was equivalent to 43.6 per cent. On June 30, 1914, the stock of monetary gold was equivalent to 29.7 per cent of our national bank deposits (exclusive of bankers' balances), and on December 31, 1919 (the date of the last Comptroller's call for which figures are available), the stock of monetary gold, less that held by the federal reserve system as reserve against issues of federal reserve notes, was equivalent to only 14.1 per cent of the national bank deposits.

Briefly summarizing the evidence as to inflation during the period 1913 to 1919, we find that for those six years the physical volume of business increased approximately 9.6 per cent, the monetary circulation 71 per cent, and bank deposits 120 per cent. The percentage of actual cash reserve held against deposits meanwhile declined from an average of 11.7 in 1913 to 6.6 in 1919. There was contemporaneously a large decline in the ratio of gold to the country's total cash and to its total supply of exchange media.

Is it surprising under the circumstances that the level of prices during this period much more than doubled, that scarcely any commodities of importance can be found whose price are not at least 60 per cent higher to-day than in 1913, and that the public is up in arms against the high and rising cost of living? But this is the subject of the next chapter.

CHAPTER II—HIGH PRICES

CHAPTER II

HIGH PRICES

The great increase, noted in the preceding chapter, in the available supply of currency and circulating credit taking place at a time when the physical volume of business was increasing but slowly, naturally led to a price bidding contest for supplies and labor between individuals on the one hand and individuals and the Government on the other under the spur of war needs—a price bidding contest that pushed prices up to heights previously undreamed of in this country since the greenback days of the Civil War.

Of course even without inflation the prices of those commodities for which the war made most urgent demands, such as munitions, ship building materials, and the like, would have advanced greatly, but these advances would have been compensated for by declines in the prices of other goods. If an individual with a given income spends more for articles A, B and C, he will, of necessity, spend less for articles D, E and/or F, unless he draws on his capital, in which case someone else will have less to spend on these or other articles. A shifting of the country's economic demand from one kind of goods, say the goods of peace, to another kind,

say the goods of war, will force up the prices of the latter, and, vice versa, force down those of the former. If more of the circulating media is used in exchanging the war goods less will be available for exchanging the peace goods, and the demand for them will fall off with a consequent reduction in their prices. The rise in the prices of the one group, however, would be compensated for by the fall in the prices of the other and little or no change in the general price level would result. When, however, this shift of the economic demand from peace commodities to war commodities is accompanied by a large inflation of the media of exchange, no such compensating effect is necessary. There may be an upward movement of practically all prices although of course the prices of those commodities upon which the war demand is concentrated will advance most.

We have in the United States several different series of price index numbers, each covering a different number and combination of commodities and each being computed on a different base, but they all tell essentially the same story. That story for the period 1913 to 1919, as regards wholesale prices, may be briefly summarized as follows:

NAME.	Number of Com- modities.	YEAR.								Last Date Avail- able.
		1913	1914	1915	1916	1917	1918	1919	265	
Bureau of Lab. Stat.,	328	100	100	101	124	176	196	212	265	Apr. 1920
Annalist,	25 ¹	100	104	106	126	187	205	211	235	June 12, 1920
Bradstreet,	96	100	97	107	128	170	203	203	216	June 1920
Dun,	200	100	101	105	123	169	190	190	217	June 1920
War. Indus. Board, ..	1366	100	98	101	125	173	192	(²)	201	Dec. 1918

All these general index numbers show an increase in average prices for the most recent dates in 1920 for which figures are available of more than 115% over those of 1913, while all but one (Dun) show prices throughout 1919 to have averaged more than double what they did in 1913. Taking the index numbers of United States Bureau of Labor Statistics as the most comprehensive and most scientifically prepared of the index numbers covering the entire period 1913 to 1919 inclusive, we may say that the wholesale price level increased from 1913 to April, 1920, 165%; in other words, if one calls the dollar of 1913 a 100% dollar in its purchasing power over commodities at wholesale, the dollar of today is approximately a 38% dollar.

The extent of this depreciation in the monetary unit will perhaps better be realized if it is

¹ Foods only.

² Not computed for 1919.

compared with the two most striking cases of monetary depreciation in Anglo-Saxon countries of the last century. I refer to the depreciation of the Bank of England notes during the period of the Napoleonic Wars, and the depreciation of our American greenbacks during the period 1862 to 1878.

Although the Bank of England suspended specie payment February 27, 1797, and did not resume redeeming its notes in coin until May 1, 1821; and although the notes were at a discount in terms of gold and silver during the greater part of this twenty-four-year period—a discount reaching a maximum of about 41%¹ for the year 1814—the greatest increase in wholesale prices for the period of suspension (using 1797 as the base year) was 49%². This price advance is equivalent to only about two-fifths of the price advance that has taken place in the United States since 1913. Stated in another way, the purchasing power of the United States dollar declined about 62% from 1913 to February, 1920, while that of the

¹ See N. F. Silberling; *British Financial Experience 1790-1830*. The Review of Economic Statistics, October, 1919, pages 286-289.

² Jevons' Index Numbers covering wholesale prices of forty commodities converted to a paper basis. *Ibid.*, page 283.

irredeemable bank note of the Bank of England declined but 33% during the entire period of the Napoleonic Wars.

The maximum depreciation of the American greenback in terms of gold during our period of suspended specie payments was registered on July 11, 1864, when gold dollars were quoted at a price of \$2.85, giving the greenback dollar a gold value of only 35.09.¹ We hear much of the greatly inflated paper money prices of the Civil War period, and yet despite this decline of the gold value of the dollar to a low point only slightly more than one-third of par, the maximum increase in wholesale prices during the period of suspension, 1861–1878, was but 116%.² This is a smaller advance than that represented by the present wholesale prices in the United States, as compared with 1913, the average increase to April, 1920—the latest date for which Government figures are available—having been 165 per cent. In purchasing power over commodi-

¹ W. C. Mitchell, *Gold, Prices and Wages under the Greenback Standard*, page 295.

² This figure is based upon wholesale prices of ninety-two commodities, and represents the maximum which was reached in January, 1865. See *A Comparison of Prices during the Civil War and Present War*. Price Section. Division of Planning and Statistics, United States War Industries Board, 1919, pages 8–9.

ties at wholesale, our gold currency is therefore more depreciated today relative to 1913 than was the inconvertible greenback of the Civil War days at its worst; namely, in 1865 as compared with 1861.

Our war and after war rise in prices has not taken place in the form of a great rise in the prices of a comparatively few important commodities needed for war and immediate reconstruction purposes accompanied by a decline in the prices of other kinds of commodities. On the other hand, price increases since 1913, like those of the greenback period, have covered almost every class of commodities—war commodities and peace commodities, “production goods” and “consumption goods,” absolute necessities and rank luxuries. No one can make a study of price movements of recent years without being struck by the wide range of commodities affected and the similarity of the price curves, shown by widely different groups of commodities, both among themselves and with the “all commodities” group.¹ Of the 1437 commodities whose price movements

¹ The few commodities whose prices were controlled by the government during the latter part of 1917 and during 1918 rose much less in price than the uncontrolled commodities. P. W. Garrett, *Government Control over Prices*. War Trade Board, Washington, 1920, pages 495-500.

were studied by the War Industries Board, only 41, or less than .29 of 1% were lower in 1918 than in 1913, and only 23, or .16 of 1% were more than 10% lower. Less than .22 of 1% of the total were 400% or more higher in 1918 than in 1913, and of these 31, 11 belong to one of the 50 classes of commodities studied —the small class labeled “coal tar crudes, intermediates, and dyes.”² Of the 1437 different commodities studied by Mitchell, 834 or 58% showed price increases in 1918, as compared with 1913, of from 50 to 150%, of which 431 showed increases of from 50 to 90%. Forty-two out of the 50 classes of commodities studied embracing 1268 out of the 1437 commodities, or 88% of the total, showed average price increases of over 75% above the pre-war level.³

The 50 charts summarizing these war-time price studies, made under the direction of Professor Mitchell for the War Industries Board and published in the Summary volume previously cited, are most illuminating. The similarity in the movements of these curves is striking, and forcibly suggests the conclusion

² See Wesley C. Mitchell, *History of Prices During the War, Summary*, pages 5 and 20. War Industries Board, Washington, 1919.

³ *Ibid.*, page 85.

that the dominant forces at work in causing the rise of prices in most classes, namely, all but a few like those of the "heavy chemicals," "essential oils," and "explosives" groups, have been forces acting on the money side of the price ratio, and not those acting on the commodity side; in other words, that, *in the main*, general prices have shown their phenomenal rise of recent years because money and credit have been becoming increasingly plentiful rather than because commodities have been becoming increasingly scarce.

There is nothing intrinsically bad in high prices. A high price level, when once completely established, that is when prices of all kinds of commodities, and when wages and contracts of all kinds have been adjusted to the new level, assuming an adequate metallic base and a similar level of prices in other countries, such a high price level is, with two minor qualifications, to be noted later, no better and no worse than a low price level. A sudden doubling of prices throughout the world, if only the doubling process applied uniformly and at once to the prices of all classes of goods, wholesale and retail, to all kinds of wages, all debts, all rates and fees, all annuities, etc., would not be materially harmful except in the

inconveniences arising from the necessity of using larger figures in all accounts and business operations, and in the inconvenience of handling a bulkier money.

The trouble is not with a high price level but with *a rising price level* (and for that matter, also, with a falling price level), and with the widely different rates of speed at which the prices of different kinds of goods and services become adjusted to the new level. It is in the transition to the new price level that the difficulties arise.

The economic and social results of a great currency and bank credit inflation, like that we have been experiencing in recent years, are large and far-reaching. To adequately describe them would require volumes. The limits of a small book will only permit a brief mention of the more important. These may be considered under two broad heads: I. Those results that are concerned with the contractual relations between debtors and creditors. II. Those results that are concerned with the varying degrees of responsiveness of the prices of different kinds of goods and services to the inflationary forces.

I. Contractual relations between debtors and creditors. Money is good for what it will

buy—no more and no less. If we assume that broadly speaking the purchasing power of the dollar has been cut in half since 1913, then all existing debts that were outstanding in 1913 have been cut in half, just as truly as if they were made payable in a fifty-cent dollar, at the price level of 1913. Measured in purchasing power we have had negative interest and negative interest with a vengeance, for the annual interest payments (which likewise have grown smaller in purchasing power each year) have not begun to compensate for the depreciation of the principal. The creditor has actually been paying the debtor for using his money, when the matter is viewed from the standpoint of purchasing power. Think what it means as regards the distribution of America's wealth, to cut in half these billions and tens of billions of long time obligations! This applies, with minor qualifications, to all bonds and debentures that were outstanding in 1913 and have not yet matured; and likewise to vast quantities of preferred stocks; it applies similarly to real estate mortgages, to savings deposits accumulated in 1913 and still held, to the paid-up value as of 1913 of billions of dollars of life insurance; and to our present day military and service pensions of all kinds that date back to

1913 or earlier and whose amounts were permanently fixed at that time. This fifty per cent debasement of the value of these billions of dollars in bonds and other funded incomes or income rights has taken place equally, whether the owner were a highly prosperous individual or money-making corporation, an endowed university, library or charitable institution, or a widow living upon a pension or upon a fixed income derived from insurance or from other invested funds.

This was fundamentally not a destruction of values but a transfer of them. If the wealth of the United States to-day were valued at 1913 prices it would probably considerably exceed the values of 1913. Inflation has not directly destroyed property, but has taken it from some and given it to others. In general it has taken it from the creditor and given it to the debtor. Specifically it has taken from the bondholder and given to the stockholder. Practically all excess profits and all accretions to the value of plant arising from inflated prices have gone to the stockholder, while the bondholder has been entitled only to a fixed amount of rapidly depreciating dollars. Inflation has taken from the mortgagee and given to the mortgagor; it has

taken from the recipient of military pensions and given to the Government; it has taken from the saving banks depositor and given to the savings bank borrower; it has taken from colleges and universities and given to the students' parents (through a cutting in half of tuition charges, as measured in purchasing power), and given also to the debtors (stockholders or governmental units) who are obligors on the bonds in which the endowments of these educational institutions are invested.

Of that which has been given to the debtor, in this period of upheaval in the relations between debtor and creditor, it should be added, much has been taken by the Government in war taxes. That which has been taken from the holder of railroad bonds, and the bonds of some other public utilities, the rates for whose services have been unduly held down by government action, while expenses have been rising, has not to any extent been given to the stockholder, but to the shipper, the merchant, and the ultimate consumer in varying degrees.

Much that has been given to the public has been used up in extravagant living, because many of the recipients have not been a capital saving and investing class.

II. Varying Degrees of Responsiveness of Prices of Different Kinds of Goods. The second broad group of economic results coming from inflation comprises those that are concerned with the varying degrees of responsiveness in different kinds of prices, and in the prices of different kinds of goods in each class, to the stimulus of inflation.¹

It has long been recognized by economists that as a general proposition, both on a strong upward movement of the general price level and on a strong downward movement, wholesale prices as a class normally move faster than retail prices, and retail prices as a class normally move faster than wages. This conclusion is well supported both by economic theory and economic history. A striking illustration of the principle may be found in our experience during the greenback period, from 1862 to

¹ Strictly speaking, the subject of debts and funded incomes, previously considered, is but a sub-division of this subject, for the market values of these debts and incomes are but one form of price, although the fact that they embody rights to definite amounts of the same kind of depreciating money in which the prices are quoted, and that their market prices represent to a considerable extent a capitalization of fixed money incomes at market rates of interest that the inflationary movement itself greatly influences—these facts make long time debts and other funded incomes such a particular class of “commodities” as to justify their separate treatment.

1879. The careful studies of Mitchell² show that following the Civil War wholesale prices in terms of greenbacks reached their maximum in 1865, retail prices in 1866, and wages in 1871. The evidence concerning price and wage movements of the last six years on the whole seems to support such a conclusion, although the evidence is not by any means as yet all in, and although that available is somewhat contradictory. There are of course numerous individual cases where retail prices rose earlier and to greater heights than wholesale, and likewise numerous cases of particular trades or industries or particular localities in which wages rose earlier and farther than retail prices.

Wholesale prices, we have seen, have increased on an average 165% from 1913 to April, 1920. Government figures show that the group of food commodities increased for the same period 170%; that the commodity group of "cloths and clothing" increased 253%, while "metals and metal products" increased only 95 per cent. The Government figures for the retail prices of 12 important articles of food show an average increase for the same

² W. C. Mitchell, *Gold, Prices and Wages under the Greenback Standard*, chart facing page 280.

period of 111%. Retail prices, as exemplified in the budgets of 12,000 laboring men's families in 92 localities, covering food, clothing, fuel, light, and house furnishings, show an average increase from 1913 to October, 1919, of 83.1%,¹ and to December, 1919, of 99%, as compared with a general wholesale price increase to December, 1919, of 138%, and an increase in the retail prices of food of 97%.

Another group of price maladjustments resulting in large part from inflation is that relating to railroads and other public utilities, the prices of whose services and products are prevented by government regulation from moving upward with the general price level under the stimulus of inflation, but whose costs for materials, equipment and wages, continually advance under that stimulus.

We have as yet no very comprehensive figures for wage movements throughout the country for the period since 1913, and such figures as are available for different kinds of labor, and even for the same kind in different localities, show widely different results. Of course it is well known that wages in certain industries for whose products the war demand was great, and likewise all classes of wages in

¹ Monthly Labor Review, Jan., 1920, pages 97-98.

centers of great war industrial activity rose rapidly and often to extravagant heights; it is likewise well known that the wages in certain other industries rose very slightly. Contrast the case of the powder mill worker and the public school teacher, the mechanic in the ship-building center and the street car conductor in the interior town removed from any great war industry. Regardless of what figures, yet to be prepared, may show as to what happened to that much-talked-about but rather indefinite thing we call "average wage" since 1913, there is no question at all but that many laborers received wage increases far in excess of the rise in their cost of living—increases that have found expression in all sorts of much-heralded extravagances,—and that on the other hand, the wages of many millions of workers have not begun to increase as rapidly as their cost of living—a fact that has found expression in great and widespread hardship. Generally speaking, the pay of government officials and clerks has not begun to keep pace with the rise in the cost of living, and the government service, civil and military, is badly suffering as a result. The salary situation among teachers, both in public schools and colleges, has become notoriously bad and our

whole American educational program is being jeopardized. Public schools are closing for lack of teachers, and colleges are losing their faculties.

The industrial survey recently conducted by the United States Bureau of Labor Statistics covered eight industries. For these eight industries respectively the average percentage wage increases were as follows:

Cigars, 52; men's clothing, 71; furniture, 54; hosiery and underwear, 84; iron and steel, 121; lumber, 94; mill work, 51; silk goods, 91. If the cost of living increase for the same period is taken as 83.1 per cent, it will be seen that the average rate of wage increase in three of the eight industries was greater than the increase in the cost of living; in four of them less, and in one of them practically the same.¹

I have before me, given on the same page,² two tables, one containing the union scale of wages by rates per hour for boilermakers in manufacturing and jobbing shops, for the years 1913 to 1919, in twenty-five widely scattered American cities; and the other containing similar figures for bricklayers in forty

¹ Monthly Labor Review, February, 1920, page 116.

² Bureau of Labor Statistics, Monthly Labor Review, November, 1909, page 173.

cities.¹ In a few cities the man in these trades have received wage increases since 1913 apparently more than sufficient to compensate for the rise in the cost of living. In Baltimore, for example, the rate for boilermakers increased from 30.6 cents per hour in 1913 to 80 cents in 1919, an increase of 161%; while in Charlestown, S. C., the rate for bricklayers increased from 40 cents per hour in 1913 to 75 cents in 1919, an increase of 88%. On the other hand, the rate for boilermakers in Chicago which was 40 cents an hour in 1913, was only 42 cents in 1917, 52 cents in 1918, and 60 cents in 1919. The rate for bricklayers in Jacksonville, Florida, was 62.5 cents from 1913 to 1918 and then rose to 75 cents in 1919. The average rate for boilermakers in the twenty-five cities was 39.5 cents per hour in 1913, and 72 cents per hour in 1919 (the latest date in the year for which figures are available being taken for the year), representing an average increase of 82%, or just about enough to meet the estimated increase in the cost of

¹ The descriptive matter accompanying the tables says: "The union wage scale figures here published represent the minimum wage of union members * * * but these figures do not always represent the maximum wage that is paid, as in some instances part or even all of the organized workers in the trades receive more than the scale" This was true both in 1913 and 1919. *Ibid.*, page 172.

living. The average rate for bricklayers in the forty cities in 1913 was 67.1 cents per hour, and in 1919 it was 90.2 cents per hour, representing an average increase of 34.4 per cent, or probably much less than half enough to compensate for the increase in the cost of living.

These two groups of figures are typical. Scores of similar comparisons might be made that would tell essentially the same story. The wage adjustment to the new price level has been *very incomplete* and *very uneven*. The adjustment to a new and stable equilibrium will require the wages of some kinds of labor to be relatively decreased and those of others to be increased. Many adjustments will need to be made in the relative wage scales for the same kinds of labor in different localities. The adjustment to a new wage equilibrium in harmony with the new price level will require much hardship, much bitter feeling, and probably much labor trouble. Of course as economic conditions improve wages must rise relatively to the cost of living, if labor is fairly to participate in the country's economic progress.

Probably the most important single cause of the widespread discontent existing throughout the country to-day, and one of the principal causes of the rapid spread of economic

radicalism is the rising cost of living with its grossly unequal effects upon the economic welfare of different economic classes and of different groups within each class. In connection with the discontent that usually results from inflationary movements, the French have a saying "the guillotine follows the paper money press—the two machines are complementary one to the other." From the standpoint of the discontent and hardship resulting, it would seem to make little difference whether the rising cost of living due to inflation took place through the depreciation in terms of gold of paper money issued to excess or through the excessive uses of circulating notes and deposit currency which are kept at par with gold.

Inflation through boosting the cost of living for millions of people at rates more rapid than it boosted wages forced these people to rigid economies that released labor and capital for the economic conduct of the war. In doing this it performed a useful service; but its burdens were grossly unequal and ill-proportioned to the shoulders that were called upon to bear them. The war's economic burden fell heavily upon those wage-earning and small salaried people whose incomes lagged far behind prices on the upward move. It was they

who did the lion's share of the real economizing that released the labor and capital needed for the production of the sinews of war.

Briefly summarized the conclusions of this chapter are as follows:

Our inflationary policy has been chiefly responsible for the great rise in the cost of living since 1913, representing a reduction of something over 50% in the value of the dollar. A high price level in itself is neither good nor bad, but a rapidly rising price level carries in its wake many economic and social evils. Inflation is a tremendous engine of wealth redistribution. It acts powerfully but blindly. It is no respector of persons or needs. It takes from the creditor, whoever he may be, and whatever his economic position in life, and gives to the debtor, regardless of who he may be, or what may be his needs. It takes from one class of laborers and gives to another. It often takes from the thrifty and gives to the extravagant.

Our present price level is in unstable equilibrium. Adjustments are uneven and incomplete. Wages in particular are poorly and unequally adjusted to the new level of prices. The problem of eliminating these maladjustments and of bringing prices and wages again into equilibrium, both national and inter-

national, will be a difficult one and will demand for its solution exceptional intelligence, courage, and tolerance.

CHAPTER III—DEFLATION

CHAPTER III

DEFLATION

In the preceding two chapters the process of inflation was explained, the degree of inflation existing in the United States was statistically examined, and some of the more important economic consequences of the resulting high prices were considered. These were questions of fact and of causation. The present chapter is chiefly concerned with the question of policy. Assuming the essential soundness of the reasoning in the preceding two chapters, it asks: What should we do about it? Should we continue to inflate, stay where we are, or deflate?

Whatever may be said in favor of a policy of inflation as a means of financing a great war, little can be said in favor of continuing such a policy after the close of the war. The evils of inflation are very real and we know that although the bubble may at times appear to be full of rainbows it must burst if we continue to blow it. Let us pass at once, therefore, to the other two possibilities, namely, that of maintaining the status quo and that of deflating.

Why not accept the present situation as regards currency and credit inflation with its resulting high price level as an established fact, and frankly adjust our economic life to this new level? There is much to be said in favor of such a policy, particularly in a country like the United States that has maintained itself during the inflation period on a gold standard. The chief desideratum in a sound currency system is stability in the value of the monetary unit. We have heard much since 1896 of the evils of a depreciating monetary unit or, in other words, of the rising cost of living, but these were not our monetary troubles of a generation ago. Then the evils were those resulting from falling prices—evils that led to a world-wide agitation for bimetallism. Among the evils of falling prices so strongly featured in the monetary discussions of the last two decades of the 19th century three stood out prominently, they were:

- (1) The injustice of a falling price level to the debtor classes.
- (2) The depressing effect of a falling price level upon business.
- (3) The influence of a falling price level in reducing the demand for labor and thereby increasing unemployment and depressing wages.

The general wholesale price level expressed in terms of gold fell about 41 per cent in the United States from 1872 to 1896. In other words, if one calls the gold dollar of 1872 a 100 per cent dollar in its purchasing power, the dollar of 1896 was a 170 per cent dollar. Debtors, therefore, whether they were farmers paying money on farm mortgages, house-holders trying to pay off mortgages on their homes, corporations or governmental units with bond issues of some years' standing, were being called upon to meet their obligations, principal and interest, in money of greater value than that which they had originally borrowed. The purchasing power of a gold dollar was increasing on an average about $2\frac{1}{4}$ per cent a year (measured geometrically). The farmer's mortgage remained unchanged in the amount of dollars called for, principal and interest, but the rise in the value of the dollar caused the farmer to receive continually declining prices for his wheat, cattle, and other products. Appreciation in the value of the dollar, therefore, or a falling level of prices worked much injustice to the debtor classes and this injustice was the most important item in the indictment bimetallists brought against the gold standard.

The same principle, although with mitigating circumstances to be noted later, would apply to-day should we pass through a period of deflation and falling prices. Many people who borrowed "cheap dollars," namely, dollars of low purchasing power, during the period of inflated prices would suffer hardship in being required to pay their indebtedness, principal and interest, in dollars of high and increasingly high purchasing power. Debts would remain fixed while the prices of the articles that producers had to sell, and earned incomes, would decline to lower levels.

The greatest long-time borrower during the period of the war was the Government. Our net war debt deducting the amount due us from the Allies is approximately ten and one-half billion dollars. Most of these dollars, when the Government received them, were dollars of low purchasing power. If we should deflate rapidly and substantially the Government would repay dollars of high and continually higher purchasing power. It would get these higher purchasing power dollars by taxes. In the light of modern tendencies in federal taxation it appears probable that those who held the bonds would be the ones who would be called upon ultimately to pay the

lion's share of the taxes which would provide the Government with the funds for interest payments and amortization. But the public would not realize this; particularly in view of the tax exemption privileges enjoyed by these bondholders. It does not require much imagination therefore or political acumen to see visions of attempts at deflation being countered in the near future, as they were about half a century ago, by the charge that "the great moneyed interests, the tax exempt bondholders, who had manipulated the market so as to get most of the bonds into their own hands, had artificially depressed commodity prices and were exploiting the public by forcing up the value of the dollars the Government owed them." These words will have a familiar ring to persons acquainted with the demands of the Greenback Party of 1876 and with the charges later made concerning the "Crime of 1873."

Inflation for a time has a stimulating effect upon business. Things boom, and many classes of people feel prosperous when prices are rising, but this stimulant, like alcohol when taken in excess, always has its "morning after." A falling and prospectively falling price level is depressing to business. It throws

a wet blanket over industry. When the prospects are strong for a period of declining prices consumers postpone purchases, retailers and wholesalers let their supplies run down, manufacturers "play safe" both in running their plants and in purchasing raw materials. New buildings and other new capital equipment are postponed for the day of lower prices. The business world refuses to capitalize inflated prices. The expectancy of heavy price reductions breathes a spirit of uncertainty into the economic atmosphere. A falling price level therefore would not be universally popular however much most of us at the present time think we would like to see it.

The third evil result of a substantial and continuing decline in the price level is its harmful effect upon the welfare of labor. This is a natural result of the depressing effect upon business just described. When business holds back in anticipation of falling prices the demand for labor declines and men are laid off. Increasing unemployment causes hardship and is a potent factor in forcing down wages and weakening the hold of trade unions on their men. Labor naturally resists wage reductions even though the price level is falling, and this

means that a period of falling prices is likely to be characterized by many labor troubles.

The hardships therefore and the resulting political difficulties of carrying through a program of price level reduction through deflation are so serious that we should enter upon such a program, if at all, only after careful deliberation and under the pressure of strong reasons. Are there strong reasons why we should deliberately suffer these hardships and adopt a program of deflation? I believe there are, provided the deflation be not excessive, and that the program be carried through with firmness, moderation and reason.

Why then is deflation necessary? The strongest reason for deflation is that our present gold base is altogether inadequate safely to support the present paper money and deposit currency circulation. While this is true of the United States it is true to a much higher degree of most other advanced countries of importance. The safety and security of our economic organization demand that there be a reasonable relationship between the size of the metallic base and the size of the superstructure of circulating media it supports. Long experience gave each country a rough idea of what that proportion should be under the con-

ditions existing prior to the great war. Of course there were variations in this proportion from season to season but there was in each country a fairly recognized norm about which these seasonal movements fluctuated. A suggestion of how far some of the leading countries have departed from that ratio of metallic reserve to note and deposit currency circulation that pre-war experience had shown to be the wise one will be found in the figures given in the following paragraphs. Unfortunately the metallic reserve ratios of many countries of pre-war days and those of to-day as officially published are not strictly comparable because of changes wrought by the war in currency and banking organization, in methods of computing reserves, and in the character of the published statistics. The figures given below therefore should be considered only rough approximations. Where they err, they are more likely to err on the side of understating the decline in the metallic ratio since pre-war days than in overstating it, for in belligerent countries the war strain encouraged the making of as good a showing as practicable.

The bank notes outstanding from the issue department of the Bank of England on May 20, 1914, were £52.6 millions against which

the issue department held a gold coin and bullion reserve of £34.2 millions or 65 per cent, which was a fairly normal percentage. On March 3, 1920, the outstanding bank notes of the issue department were £131.4 millions, and there was outstanding in addition (March 4) government currency notes to the amount of £327.5 millions. The combined outstanding note circulation was therefore £458.9 millions. Against these notes there was a combined gold coin and bullion reserve on March 3 and 4, 1920, of £141.4 millions, or 31 per cent. On May 20, 1914, the Bank of England was carrying a reserve of 43.6 per cent against its deposits, which was a fairly normal percentage, and on March 3, 1920, this reserve had fallen to 19.6 per cent.

On December 26, 1913, the Bank of France was carrying in its vaults a metallic reserve of 62.10 per cent against its notes and deposit liabilities combined, which was about a normal reserve; and on March 4, 1920, this reserve had declined to 9.3 per cent. The metallic reserve against notes and deposits of the Bank of Italy declined from 71.2 per cent on May 20, 1914, to 11.2 per cent on October 31, 1919. That of the National Bank of Belgium declined from 31.7 per cent on June 11, 1914, to

5.1 per cent on February 26, 1920. The Bank of Japan held a metallic reserve of 43.2 per cent on June 30, 1914, and one of 38.0 per cent on March 6, 1920.

The metallic reserve of the German Reichsbank was 42.72 per cent December 31, 1913, and 2.17 per cent February 23, 1920. For the Austro-Hungarian Bank the metallic reserve declined from 73.6 per cent on June 25, 1914, to 0.53 per cent December 31, 1919. In Russia the condition is much worse, where the situation is aggravated, as it is in Germany, by huge issues of paper money in addition to ordinary bank notes.

The neutral countries of Europe are generally supposed to have had their banking positions strengthened by the war. These countries are mostly countries of comparatively small populations (Spain being the largest with less than 21,000,000), and of secondary importance as factors in the world's market for gold.

For the Bank of Spain the ratio of the metallic reserve to circulation and deposits increased from 46.76 per cent on December 27, 1913, to 62.4 per cent on February 28, 1920. For the Netherlands Bank there was an increase from 52.4 per cent on March 31, 1914,

to 55.79 per cent on February 28, 1920. For the National Bank of Switzerland there was a decline from 62.9 per cent on June 11, 1914, to 60.5 per cent on February 23, 1920. The Bank of Norway showed a decline from 39.7 per cent on June 15, 1914, to 31.0 per cent on February 23, 1920; and the Bank of Sweden a decline from 36.8 per cent on June 13, 1914, to 31.9 per cent on February 21, 1920. Every one of these neutral countries has experienced a great increase in the volume of metallic reserve in its national bank, but three out of the five national banks have expanded their bank notes and deposits more than proportionately with a consequent reduction in the percentage of reserve; and one of the other two has not improved its reserve position very much.

Taken as a whole the above figures point to the conclusion that unless Europe's metallic reserve percentages were vastly in excess of her needs during pre-war times—and there is no evidence that they were—they are to-day altogether inadequate to support on a par gold basis Europe's present volume of notes and circulating deposit credit.

Let us now turn to the United States, the country that is supposed to have absorbed the larger part of the gold lost by the belligerent

countries of Europe. Unfortunately a change made some time ago in the form of compiling the bank figures published by the Comptroller of the currency makes it no longer possible to tell how much gold is held by reporting banks in their own vaults. This fact together with the complete reorganization of our legal reserve requirements, brought about by the establishment and development of the federal reserve system, renders a comparison of the exact percentages of gold reserve held in the United States before the war and now, impracticable. Some idea of our changed position since June, 1914, however, may be found by comparing for that date and the present the ratios of our stock of monetary gold to the total amount of money in circulation and to total individual deposits in national banks. These figures have been previously given,¹ and need only be summarized here.

Our stock of monetary gold on July 1, 1914, was equivalent to 55.3 per cent of our total monetary circulation, and on June 1, 1920, it was equivalent to 43.6 per cent. On the former date it was equivalent to 29.7 per cent of our national bank deposits (exclusive of

¹ Pages 28 and 29. See, also, the author's article on Inflation in American Economic Review, June, 1918, pages 251-252.

bankers' balances), and on December 31, 1919, the stock of monetary gold, less that held by the federal reserve system as reserve against federal reserve notes, was equivalent to only 14.1 per cent of the national bank deposits. Ultimate cash reserves, against deposits in commercial banks, declined from an average of 11.7 per cent in 1914 to 6.6 per cent in 1919.

Our gold position is thus far below that of pre-war times and we have been losing gold on net balance almost continually since May, 1919, our net loss for the period January 1, 1919, to June 10, 1920, having been in round numbers \$386 millions. To us, however, more than to any other country, belligerent Europe ultimately will look for the replenishment of her gold in order to return to a specie basis.

A second reason in favor of deflation, although one that grows weaker the longer deflation is postponed, is found in the fact that inflation's work has not yet been completed and that therefore some of the otherwise evil results of our inflation experience would still be avoided or mitigated by deflation. There are still outstanding in this country many billions of dollars of long-time obligations which date from the pre-war period, have still

some years to run before maturity and which continue in the hands of their pre-war owners. Probably most of the bonds and mortgages owned by savings banks,¹ insurance companies, educational, charitable, and other endowed institutions belong to this class, as do also many of the non-war bonds to-day held in the strong boxes of individual investors. If these bonds were sold to-day or were to mature with commodity prices at their present high level they would be paid for or paid off in greatly depreciated dollars; but if we should have a period of substantial deflation with falling prices the owners of these bonds, the depositors in the savings banks, the beneficiaries of the insurance policies, etc., would benefit, and to the extent that they were the same persons who held the bonds, owned the deposits, etc., in the pre-war times, they would get back, in part at least, what they now appear to have lost through inflation.

¹ The writer estimated in 1918 on the basis of figures collected through a questionnaire of the American Bankers Association that the 622 mutual savings banks of the country held bonds and other securities, with maturities later than ten years, of \$1,680 millions. It is doubtful whether these securities have to any extent been since disposed of. Bankers Convention Section, Commercial and Financial Chronicle, October 12, 1918, p. 207.

Although the situation seems to make deflation necessary, it does not by any means follow that an effort should be made to deflate to the pre-war price level. From 1896 to 1913 our American wholesale price level rose about 50 per cent, representing an average annual increase (measured arithmetically) of approximately 3 per cent. Even without the war, therefore, we might reasonably have expected, as the result of a continuation of pre-war forces, an increase in prices from 1913 to 1920 of something like 20 per cent.

But much more important than this is the fact that the war period has probably wrought important permanent changes in our currency and banking systems—changes which will greatly improve the efficiency of these systems and thereby enable a given amount of gold to carry on its shoulders a larger load of exchange work than in pre-war days. This is a large subject and only a few phases of it can be suggested here.

It appears likely that in the future the world's supply of monetary gold will be found to an increasing extent in the vaults of central banks and will be used to a decreasing extent for purposes of hand to hand circulation. This will greatly increase the monetary efficiency

of the average ounce of monetary gold. Furthermore the establishment and development of our federal reserve system, the increasing movement for bank consolidation in Europe and America, the reduction of gold shipments both national and international through the creation of such devices as our gold settlement fund, and the increasing use of funds located abroad for making international payments through debits and credits without the necessity of shipping gold—these changes and others of a similar character are resulting to an ever increasing degree in economizing the use of gold and in thereby reducing the ratio of the gold base to the credit superstructure it supports. We can do a given amount of money work with less gold because gold is being made to work harder and more efficiently.

A factor which may possibly reduce the structure of circulating credit in proportion to the gold base is the debasement of the gold units of value in certain foreign countries. When one notes the tremendous depreciation to-day in the gold values of the paper money units of many belligerent countries, at a time when the value of gold itself in terms of commodities has been more than cut in half in six years, and when he notes the staggering bur-

dens of debt these countries are carrying he need not be surprised to hear increasing demands among their peoples for debasing the legal gold unit of value. Advocates of debasement will point out that the government in floating its domestic debt received its pay largely in greatly depreciated paper money. They will show that even if it were possible for the government ultimately to pay these domestic debts in the old monetary units, at a parity with gold, such payment would involve an oppressive burden of taxation that would be grossly unjust in that it would give to the bondholder a much more valuable money than he originally loaned to the Government. They will stress the depressing influences on all kinds of business of a currency contraction that would bring the value of the present paper monetary unit back to par, a contraction in some countries as, for example, in Germany, Austria and Russia, of thousands per cent. It appears probable that we shall witness in the near future widespread and vigorous movements in many countries in favor of the adoption of new gold units of value somewhere in the neighborhood of their *de facto* paper money unit of to-day, or at least much lower than their pre-war gold units. Monetary his-

tory is full of examples of such debasement. If the existing paper money unit should appear to be of an inconveniently small value, its name might be continued and also its legal power in settlement of domestic debt, while a new unit might be superimposed upon it of which the old unit would become merely a division. Suppose, for example, the mark should be stabilized at a gold value of 2.5 cents United States currency, retaining its name and its present domestic debt-paying powers, and suppose this mark should be made the "dime" of a new German unit worth, say 25 cents, United States currency, and called perhaps a "Hindenburg." Obviously by such a process a given weight of gold in Germany would have its efficiency for reserve purposes multiplied approximately ten times, and the return to a gold basis would be greatly expedited. That this would be a form of domestic debt repudiation and be open to many serious objections is of course obvious. Here we are neither arguing for or against such a proposition, but merely pointing out that to a large number of people in the most debt-burdened and paper money-ridden countries of Europe such a course is likely to appear, with all its difficulties, to be the least objectionable road to day-

light. The adoption of such a program by some countries would obviously reduce the amount of deflation necessary in other countries to bring the structure of circulating credit down to a reasonably safe multiple of the gold base.

How should deflation be brought about? This is a large question in itself and the limits of this book will prevent anything more than the mention of a few points. In general, it may be said, we must reverse the process by which we inflated. By maintaining official discount and loan rates at federal reserve banks below the market rates and by granting rediscounts liberally, we placed "the market in the federal reserve banks," we encouraged a "borrow and buy" policy for war bonds and certificates of indebtedness, and made borrowing that resulted in a rapid expansion of our circulating bank credit—deposit-credit and federal reserve notes—appear to be both profitable and a matter of patriotic duty to all parties concerned.

The fact that these two kinds of circulating credit were interchangeable to the public on demand, by the deposit of federal reserve notes or by the cashing of checks for notes,

enabled the public to decide what proportion of this increased supply of circulating credit it should hold in the form of deposits and what proportion in the form of federal reserve notes. We inflated by expanding circulating credit. The public decided the form in which this newly created credit should circulate.

Preferentially low discount rates on war paper were an additional factor in this deposit and note expansion, and one that explains in part the large holdings of such paper by our banking institutions, holdings that are estimated to amount to something in the neighborhood of six billion dollars.

Now that the war is over this sort of expansion clearly should be stopped. War patriotism and progressive bank-credit expansion can no longer buoy up the prices of billions of dollars of war securities to artificially high levels. The real market rate of interest must now emerge and dominate the situation. There is no question but that the real rate is much higher than the camouflaged war rate. To an increasing degree Government war bonds and certificates of indebtedness must stand upon their own bottoms as investments.

The market should be "outside of the federal reserve banks." In other words, the

federal reserve bank rate should rule as it did before our entrance into the war, and as does usually the Bank of England's official discount rate, higher than the market rate so that recourse by banks to the discount and loan facilities of the federal reserve banks should be only an emergency recourse for temporary needs, not a recourse for permanent funds.

In the future preference should be shown to short-time loans of a self-liquidating character, as originally contemplated by the federal reserve system; and to an increasing degree, loans on the security of government debt should be discriminated against by federal reserve banks, both as to discount rates and in the matter of the banks' discretion, as to how much they shall loan and to whom. Gradually but firmly government paper should be forced out of the federal reserve banks and out of the commercial member banks and into the strong boxes of the investing public, including the vaults of savings banks, insurance companies, and endowed institutions. To this end, in my judgment, the federal reserve banks should follow up their recent advances in discount rates, gradually raising the rates higher until they become effective in forcing contraction. The present preferentially

low rate on loans secured by certificates of indebtedness should be discontinued. If an artificially and preferentially low rediscount rate is necessary in order to enable the government to float these securities at their present low interest rate, then we are paying the price of further inflation for a low interest rate on the certificates. In that case why not frankly recognize the fact that in an unsupported market the present rate is too low and should be raised, if further issues become necessary.

The same principle applies to government bonds. If the market rate for these bonds, unsupported by an inflationary loan policy on the part of the federal reserve banks, proves to be much higher than the par rates they pay (when due allowance is made for the tax exempt privileges of these securities and for the government's program of gradual debt reduction), and if resulting heavy declines in bond prices work hardship to innocent bond-holders who bought their bonds in good faith, then the government might well consider plans of refunding at a fair market rate of interest. We should not be under the necessity of seriously impairing our banking system and of perpetuating highly inflated and unstable circulating media, with consequent high prices,

in order to buoy up the market prices of bonds that were floated at abnormally low interest rates on waves of war patriotism.

The federal reserve banks might well be decreasingly receptive to applications for loans and rediscounts from banks which they know are lending their own funds heavily in the speculative market, or are extending credit unduly for the production and marketing of luxuries, and from banks whose borrowings from their federal reserve banks are disproportionately large as compared with their capitals.¹ Although the law already gave the federal reserve authorities large discretionary powers in such matters, it is well that the government has just strengthened their hands by passing the "Phelan Act" which authorizes them to charge progressively higher rates of discount on paper rediscounted for any banks in excess of what may be considered a normal line.

Federal reserve banks whose gold reserves against federal reserve notes fall below 40

¹ By using capital or capital and surplus as the criterion instead of deposits, much needed pressure would be exerted to force many of our banks to increase their capital funds to a safer percentage of their deposit liabilities. See the author's article on The Ratio of Bank Capital to Deposits. Bankers Statistics Corporation Service of May 4, 1920.

per cent, after allowing for a 35 per cent lawful money reserve against deposits, should be promptly subjected to the tax on deficiency reserves provided for in Section 11, Paragraph (c) of the Federal Reserve Act.

The federal reserve banks are the strongest central banking system in the world to-day. For some time their reserve position has been growing progressively weaker. Much of the "slack has been taken up." These banks will be the world's greatest financial conservator in the trying times of reconstruction confronting us. They must keep strong and highly liquid so as to be prepared to meet their responsibilities to America and to the world.

If deflation is to be accomplished, obviously governments must stop meeting current expenses by printing paper money and by issuing bonds to be hypothecated in large quantities at banks. Governments must practice most rigid economy, keep their current expenses well within their current incomes, and proceed promptly as the United States is doing, to a gradual reduction of the war debt.

We should not permit our commercial banks to be loaded up with European public debt or other long-time foreign obligations. How-

ever good and desirable such investments may be, their place is not in our commercial banks.

The principal conclusions of this chapter may be summarized as follows:

Deflation is a painful economic process. By raising the value of the monetary unit in which debts are expressed it places unjust burdens upon many debtors to the advantage of creditors. It depresses business, and tends to reduce the demand for labor thereby increasing unemployment, forcing down wages, and causing labor troubles.

Despite these evils, world deflation is absolutely necessary, although less deflation is needed in the United States than in most advanced countries. The existing gold base is altogether inadequate safely to support the present paper money and deposit currency circulation at a parity with existing gold monetary units in a free gold market. Furthermore, inflation's work has not yet been completed and therefore some of the otherwise evil results of our inflation experience could still be avoided or mitigated by deflation.

There is no need of deflating to the pre-war price level. Even without the war the price level would presumably be considerably higher to-day than in 1913. The war period has

taught many lessons and brought about many improvements in currency and banking that will render a given amount of monetary gold more efficient than before, making it support a larger superstructure of circulating credit and thereby permanently raising the world's gold-standard price level. Considerable contraction may occur through the debasement of monetary units in bankrupt countries.

Deflation may be aided by a vigorous discount policy on the part of federal reserve banks, that will take "the market out of bank" by keeping the federal reserve bank rates well above the market rates. To an increasing degree the federal reserve banks and commercial banks should discriminate, in making advances, in favor of short-time self-liquidating commercial paper, and against war debt paper and loans that directly or indirectly provide funds for speculation.

Finally, we should preach and live the slogan "work, save and pay up."

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